

REMARKS

The following remarks are being submitted as a full and complete response to the Office Action dated June 18, 2007. In view of the amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to all outstanding rejections and/or objections, that they be withdrawn, and to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1 and 3-12 are under consideration in this application. Claim 2 is being cancelled without prejudice or disclaimer. Claims 1 and 3-4 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicant's invention. New claims 5-12 are being added.

Additional Amendments

The claims are being amended to correct formal errors and/or to better recite or describe the features of the present invention as claimed. All the amendments to the claims and the specification are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Informality Rejections

The drawings were objected to for not showing certain features described in the specification. Claims 1-4 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. As the claims and the specification are being amended as required by the Examiner, the withdrawal of the outstanding informality rejections is in order, and is therefore respectfully solicited.

Prior Art Rejections

Claims 1-4 were rejected under 35 U.S.C. §102(b) as being anticipated by US Pat. No. 5,899,867 to Collura (hereinafter "Collura"). This rejection has been carefully considered, but is most respectfully traversed.

The training assistant system of the present invention (for example, the embodiment depicted in Fig. 1), as now recited in claim 1, comprises: a training task presentation unit 120 for presenting a training task (e.g., calculation in Fig. 5, open & close palm in Fig. 9) and a training content to a trainee having a damage in the brain (p. 2, line 3); a trainee's response

collection unit 111 for collecting, from the trainee, a response in accordance with the training task and the training content; a brain activity measurement unit 101 for measuring brain activity of the trainee; and an information processor 108 for controlling presentation by said training task presentation unit 120 and determining a next training task to be performed such that at least a first result (e.g., *“the promptness and preciseness of a response from the trainee to the presented training task”* p. 15, lines 19-20) of the response obtained from the trainee’s response collection unit 111 and a second result (104 in Fig. 3) of measuring the brain activity of the trainee in a training execution process, which is obtained from said brain activity measurement unit 101, are used to decide the next training task to be performed (Step 511 in Figs. 4& 8; p. 15, lines 9-16). The brain activity measurement unit 101 measures the brain activity at each of a plurality of regions in the brain, and includes a selection unit for selecting, among said plurality of regions, a region of interest ROI (e.g., a working memory in the frontal cortex, p. 13, line 4) which has the damage in the brain (p. 6 lines 15-16) and used to evaluate a result of training and to determine the next training task to be performed (cancelled claim 2; *“set at least one region of interest (ROI) at which brain activity measurement is performed”* p. 11, last paragraph).

For example, if the region of interest (ROI) is the working memory in the frontal cortex, and if the brain activity is lower at the completion of the training than at the initiation thereof, it can be judged that the training effect is recognized. This indicates that the trainee has been skilled enough to perform the training task without depending so much on the temporary memory storage. An improvement in training effect can be recognized from the result of brain activity measurement even if a training effect is not recognizable in terms of response promptness and preciseness. If a training effect not recognizable in terms of response promptness and preciseness, and if the peak value of brain activity is invariable or tends to increase, it is judged that a training effect has not been achieved yet (p. 16, last paragraph).

Based on the first and second results, a next training task is determined (Step 511). If the result of evaluation is that a training effect is recognized, a task on a higher difficulty level is determined by shortening a standard time given to the trainee to respond or giving a more complicated calculation task. If it is judged that a training effect is not recognized, a task on the same difficulty level or an easier task is determined or the training task is changed (p. 19, lines 18-27).

As recited in claims 4-5, said information processor sets evaluation criteria for the first result of training the trainee and evaluates said first result of training the trainee based on the

evaluation criteria. For example, a response time of 3 seconds and a correct answer rate of 80% are exemplary threshold values for judging that a training effect is present, and a response time of 5 seconds and a correct answer rate of 70% are exemplary threshold values for judging that a training effect is absent (p. 17, lines 15-20). As recited in claims 6-7, said information processor sets evaluation criteria for the second result of training the trainee and evaluates said second result of training the trainee based on the evaluation criteria. For example, a 5% change in the peak value of brain activity has been set as a threshold value for evaluation in the approach (4) (p. 17, lines 20-23). As recited in claims 8-9, said information processor sets evaluation criteria for the first and second results of training the trainee and evaluates said first and second results of training the trainee based on the evaluation criteria. For example, if the peak value of brain activity at the completion of training is 5.5% lower than the peak value of brain activity at the initiation of training irrespective of a response time of 4.5 seconds and a correct answer rate of 75% obtained from the trainee, the information processor 108 shows the response time, the correct answer rate, and time-series variations in the peak value of brain activity on the display unit 120 (p. 17, line 23 to p. 18, line 3).

As recited in claim 10, the selection unit compares a first timing of the response obtained from the trainee and a plurality of second timings of the brain activity in the regions of the brain, and selects the region of interest by judging synchronism between the first timing and the second timings (Step 807 in Fig. 8; p. 25, lines 1-6). As recited in claim 11, the synchronism between the first timing and the second timings is judged by using a correlation coefficient or a calculation method (p. 24, lines 10-13). As recited in claim 12, said training task is presented via at least images or sounds (p. 24, lines 4-13).

Applicants respectfully contend that Collura fails to teach or suggest such a “brain activity measurement unit 101 which measures the brain activity at each of a plurality of regions in the brain, and includes a selection unit for selecting, among said plurality of regions, a region of interest which has the damage in the brain and used to evaluate a result of training and to determine the next training task to be performed” as in the present invention.

In contrast, Collura only records self-administered monitoring, displaying, analyzing and recording electrical activity of the brain to provide indications of brain activity and a corresponding mental state of a user (Abstract). Collura does not concern any “damage/injury in the brain”, or selecting “a region of interest which has the damage in the brain”, as does the present invention.

Collura further does not use a first result of the patient response to the first training task and a second result of measuring the brain activity during a training execution process to decide the next training task to be performed as recited in claim 1.

Collura further does not teach or suggest the evaluation criteria, including a response time, a correct answer rate and a change percentage in a peak value of the brain activity, for evaluating the first and second results as recited in claim 4-9.

Moreover, Collura does not teach or suggest “comparing a first timing of the response obtained from the trainee and a plurality of second timings of the brain activity in the regions of the brain thereby selecting the region of interest by judging synchronism between the first timing and the second timings” as recited in claim 10, or “judging the synchronism between the first timing and the second timings by using a correlation coefficient or a calculation method” as recited in claim 11.

Applicants respectfully contend that none of the cited references or their combinations teaches or suggests the features recited in the independent claim 1 or its dependent claims as the present invention. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

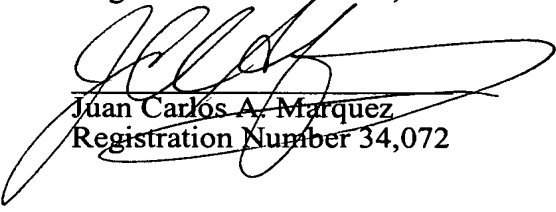
Conclusion

In view of all the above, Applicants respectfully submit that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and telephone number indicated below.

Respectfully submitted,

Stanley P. Fisher
Registration Number 24,344



Juan Carlos A. Marquez
Registration Number 34,072

REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, Virginia 22042
(703) 641-4200

September 18, 2007

SPF/JCM/JT